Economic Growth & Human Development: The Experience of Indian States

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This paper explores the links between economic growth and human development by identifying two chains based on Indian empirical evidence, one from economic growth to human development and the other from human development to economic growth. The results indicate that there are widening inter-regional disparities in human development over a long period of time. In the liberalization period the states showed a tendency of convergence rather than divergence in terms of human development. The empirical analysis reveals that there is a positive relationship between public expenditure and human development. The influence of public expenditure on human development is higher than that of economic growth. The empirical evidence is in support of the higher public expenditure on health and education that leads to higher human development.

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Introduction

In 1990 the United Nations Development Programme (UNDP) brought out the first Global Human Development Report under the leadership and inspiration of Mahbub Ul Haq. The Report stressed that the real wealth of a country is its people and the purpose of development is to create an enabling environment for them to enjoy long, creative and healthy lives. Human development is defined as the process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development the most critical and essential ones are for people to lead a long and healthy life, to be educated and to have access to resources needed for a decent standard of living. If these choices are not available, many other opportunities remain inaccessible (UNDP 1990, 1993, 1997). Based on Indian empirical evidence, this paper explores the link between economic growth and human development by identifying two chains, one from economic growth to human development, and the other from human development to economic

growth. The results indicate that, there is a widening inter-regional disparity in human development over a long period of time. In the liberalization period, the states are showing a tendency of convergence rather than divergence in terms of human development. Further, the empirical analysis on the relationship between public expenditure on human development indicates a positive relationship between these variables. The influence of public expenditure on human development is higher than that of economic growth. The empirical evidence is in support of higher public expenditure on health and education in order to attain higher human development.

Objectives of the Study

The present study focused mainly on following objectives:

1. To examine the chain relationship between economic growth and human development.
2. To examine the effect of economic growth on human development in Indian situation
3. To insight and support the role and influence of public expenditure on human development.

Methodology & Data Sources

The data for the study has been collected mainly from the secondary sources. The study is descriptive and analytical in nature. Data was collected from various published sources such as UNDP Human Development Reports, World Development Reports, various issues of Economic Survey, National Human Development Report 2001, Karnataka Human Development Report 2005 and Meghalaya Human Development Report 2008. The study analyzed the inter-state disparities inhuman development in terms of Human Development Index (HDI) and Gender Related Development Index (GDI) with the help of Coefficient of Variance. In addition to this, two-way relationship between economic growth and human development of 15 major Indian states has been examined with the help of the following formula.

$$HDI = \hat{a}_0 + \hat{a}_1 D_1 + \hat{a}_2 T + \hat{a}_3 Gr + \hat{a}_4 Ee + \hat{a}_5 He + ut$$

Where

HDI = Human Development Index for the periods of 1981, 1991, 2001 and 2005

D_1 = Dummy variable for the initial achievement

T = Time variable

Gr = Growth rate for the periods 1970-71 to 1979-80, 1980-81 to 1989-90 and1990-91 1999-2000 and 2010-11

Ee = Expenditure on education for the periods of 1981, 1991, 2001 and 2011

He = Expenditure on health for the periods of 1981, 1991 2001 and 2011

Ut = Disturbence term

We are considering HDI, education and health dimensions for the period - 1981, 1991, 2001 and 2005 for the 15 major states in India. Hence the data exhibits the characteristics of time series as well as cross sectional information. However, the time period is limited to only for the four decades and hence considered to be restrictive time series. Further, to predict the initial achievements in human development, dummy variables are introduced.

Conceptual Clarification

The causal link between human development and economic growth has been quantitatively examined on its two chain relations: from economic growth to human development and from human development to economic growth. Obviously, there exists a strong two-way relationship between economic growth (EG) and human development (HD).

Chain A: From EG to HD

From the material side of HD, the use of economic resources is essential. Hence, a society's total command over economic resources (GNP) provides the source of HD achievements in this dimension. But the way economic resources are distributed and allocated can lead to very different HD performance for any given macro economic achievement (i.e., level or growth in GNP per capita). To understand the success of HD, therefore, we need to explore how economic resources translate into HD achievements, as well as the determinants of the changing resource base to which HD performance itself makes an important contribution.

The economic resources or GNP translate into human development mainly through household and government activity, civil society and other NGOs. The same level of GNP can lead to very different performance in HD according to the allocation of GNP among and within these institutions and variations in their contribution to HD. The households propensity to spend their after tax income on items which contribute directly to human development varies, depending on such factors as the level and distribution of income across households as well as on who controls the allocation of expenditure within households. In general, poor households spend a higher proportion of their incomes on human development items than those with higher incomes, and similar results flow from greater female control over household income.

Private Income Poverty (PIP) arises among households which have inadequate disposable income and Social Income Poverty (SIP) arises among households, which have inadequate access to publicly provided goods and services. Empirical evidence indicates that, in general, PIP is reduced with economic growth, the extent of the reduction varies greatly with the distribution of income and its change over time (Fields et al 1989, Bruno et. al 1995). The way in which growth translates into income distribution and poverty reduction depends on the nature of the growth process in particular, the extent to which it is based on the generation of employment

and on increasing rural incomes. If the output mix is labour intensive and rural incomes rise rapidly, income distribution is more likely to improve and poverty reduction to occur than if growth is urban biased and capital intensive (Rains 1979, Stewart 1977)

For a given GNP, a more equal distribution of incomes received by households will lead to lower PIP, which is likely to result in better performance on HD, since poor households are more deficient in HD elements and are likely to spend more of their disposable income on items which contribute directly to improvement in HD namely food, education and health. The empirical evidence shows that expenditure on HD related items is strongly affected by the rate of poverty reduction. It also indicates the positive effects of family income change on child schooling. While the evidence on the relations between income and health is less extensive than for education, studies suggest that household income also has a significant effect on the use of health services, some showing a much higher relative response for low than for high income households.

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Another important element determining how economic resources translate into HD is the extent of female control over income. For example, among Gambian households, the larger the proportion of food under women's control the larger has been the household calorie consumption (Von Braun 1988). Similarly, in the Philippines it has been shown that consumption of calories and proteins increases with the share of income accruing to wives (Garcia et al 1990). In the Cote d'Ivorie, an increase in women's share of cash income was associated with significantly higher spending on food and reduced spending on alcohol and cigarettes (Hoddinot & Haddad 1991).

The allocation of government resources to improving HD depends on the total level of public sector expenditure, quantum of flow to the HD sectors and the way in which it is allocated within these sectors. This can be expressed in the form of three ratios (HDR 1991). The public expenditure ratio - proportion of GNP spent by the various levels of government; HD allocation ratio - the proportion of total government expenditure going to the HD sectors and finally, HDF priority ratio - the proportion of total HD sector expenditure going to priority areas. The precise definition of what constitutes a priority area will inevitably vary according to a country' stage of development, rendering this third ratio more arbitrary and difficult to measure than the other two. But within the HD sectors, some expenditures are clearly more productive in terms of achieving advances in HD than the others. For example, basic education, especially at an early stage of development, is generally recognised to have a larger impact on HD than tertiary education. There exist very large variations across countries in each of these ratios, which imply that the same

level of GNP may be associated with very different levels of government spending on HD priorities.

Finally, NGO or other civil society activity is also another important factor which influences the chain relationship between economic growth and human development. However, this information is more scattered. There are considerable variations in the extent, vitality and effectiveness of NGO activities across countries, depending on their history, culture, tax laws and actual or perceived government deficiencies in providing services. In most contexts, NGO's play a supplementary or even marginal role, but in a few countries like Bangladesh, Kenya, Peru and India it appears to represent a major source of human development enhancement (Riddell et al 1995).

Chain B from HD to EG

In this linkage, many ways in which human development contributes to economic growth have often been emphasised. In recent years, an increasing number of studies have documented the strength and diversity of the links between the two. The strength of the links between human development and economic growth depends, firstly, on the accumulation of human capital through investments in health and nutrition, education and skills training and R & D. Secondly, it depends on accessible opportunities for people to contribute to economic development through social, political and economic participation. A higher level of human development, in addition to being an end in itself, affects the economy by enhancing people's capabilities and consequently their creativity and productivity. Clearly, the health and education of a population are among the main determinants of the composition and growth of output.

Education is also an important contributor to technological capability and technical change in industry. The higher the level of education attained by the workforce, the higher the overall productivity is, because the more educated are more likely to innovate, and thus affect everyone's productivity. Furthermore, education may effect per capita income growth through reducing population growth. Income distribution also appears to be important to this link. Recent empirical evidence suggests that the distribution of assets and income has an effect on economic growth, with a more equitable distribution favoring higher rates of growth. A more equitable distribution of assets and income implies better nutrition and a stronger demand for education and hence, higher labour productivity.

Human development alone cannot transform an economy.

The strength of these links varies considerably and there is no automatic connection between an improved level of HD and increase in per capita GDP. Creating a larger pool of educated people is not sufficient to stimulate growth, there must also be opportunities for them to be productively employed. Besides, human development alone cannot transform an

economy. Even skilled and vigorous people need machinery, buildings and infrastructure to complement their efforts to enhance growth.

EG & HD of Indian States

There are two distinct causal chain relationships between human development and economic growth. One runs from economic growth to human development through national income allocated to social sectors such as education and health. The other runs from human development to economic growth. The first link examines economic growth enhancing human development through social sector expenditures to achieve high human development across Indian states. The empirical evidence of the third world countries at the global level reveals that economic growth influences on human development through active state interventions in terms of equal distributions of income and wealth among the people, public expenditure on social sectors which includes education and health, people's participation and improved status of women in the working of the economy. Therefore, an attempt is also made to fit regression equations, which explain impact of economic growth on human development.

On the other hand, the reverse links from human development to economic growth depends on two critical factors. One is accumulation of human capital through investments in (a) education and skills formation, (b) health and nutrition and (c) research and development. The other one is the accessible opportunities to people to contribute to economic development through social, political and economic participation. As mentioned earlier, this study used the following regression model where in the flow from economic growth to human development is looked into. In other words, it explains the influence of economic growth on human development. The model specified is as follows:

$$HDI = \hat{a}_0 + \hat{a}_1 D_1 + \hat{a}_2 T + \hat{a}_3 Gr + \hat{a}_4 Ee + \hat{a}_5 He + ut$$

Where

HDI = Human Development Index for the periods of 1981, 1991, 2001 and 2005

D_1 = Dummy variable for the initial achievement

T = Time variable

G_r = Growth rate for the periods 1970-71 to 1979-80, 1980-81 to 1989-90 and 1990-91 to 1999-2000 and 2000-01 to 2010-11

E_e = Expenditure on education for the periods of 1981, 1991 2001 and 2005

H_e = Expenditure on health for the periods of 1981, 1991, 2001 and 2005

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We are considering HDI, education and health for the periods of 1981, 1991, 2001 and 2005 for the 15 major states in India. Hence the data exhibits the characteristics of time series as well as cross

Table 1: Influence of Economic Growth on Human Development Index

Variables	Co-efficient	Standard Error	Probability
Time variable	0.144780*	0.049634	0.0055
Dummy variable	0.370515*	0.032006	0.0000
Growth Rate	0.002439*	0.000883	0.0083
Education Expenditure	0.057042*	0.015683	0.0007
Health Expenditure	0.008259	0.011633	0.4815

R Square 0.98, Adjusted R Square 0.97
F – Statistic 531.9673, Prob (F – Statistic) 0.00000

Note: * P < 0.01 Significant at 1 percent level

sectional data. But the time periods are limited i.e., only for 4 decades. In that sense, the data considered are restrictive time series. Again we have introduced a dummy variable for initial achievement in human development.

The model also includes the expenditure of the government on education and health because the expenditure on both by the government has directly influenced on human development. The growth rates have significantly influenced human development. It implies that state with a higher rate of economic growth has an advantage to have higher rate of human development.

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The results of the estimation show that all the explanatory variables have positively influenced human development and their influence is significant at 1 percent level except health expenditure, which is positive but has not significantly, influenced human development. The dummy variable which is a proxy for initial level of development is found to be significant.

Inter State Inequalities

The Global Human Development Report, 2010, ranked India at 119th place out of 169 countries with HDI value of 0.519. India's human development position is lower than many in Asia like Indonesia and Malaysia, China, Srilanka and Maldives. The low per-capita income of a country does not mean low level of human development. Even with limited funds and their proper allocation, substantial improvement in human capital can be secured. Even Srilanka and China with low per capita incomes have secured higher levels of human development whose development efforts were initiated at about the same time as of India (Griffin 1992, Tan & Mingal 1992).

The various empirical studies have shown inter-state disparities in human development. We have followed more or less UNDP methodology to construct human development index based on three important indicators. Inter-state and inter-regional comparisons within the Indian states have observed inter-state dis-

parities in human development in India. The Planning Commission, Government of India took the lead in the preparation of the NHDR 2001 for the first time in the country.

At the state level, there are wide disparities in the level of human development. In the early eighties, states like Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan and Orissa have HDI close to just half of that of Kerala's. The situation has drastically changed. While Kerala rapidly increased its HDI values, the above-mentioned states could not maintain the pace and have trailed behind considerably. Punjab, Tamil Nadu, Maharashtra and Haryana have also done well on the HDI. Thus some of the Indian states are in a virtuous cycle of achievement, with growth of resources supporting improvement in human development, which, in turn, reinforced economic growth

Table 2 depicts the human development index across states in India 1981 to 2005. The HDI values vary from 0.237 to 0.500 in 1981, 0.308 to 0.591 in 1991, 0.367 to 0.638 in 2001 and 0.449 to 0.814. Among the better off states – Kerala, Punjab, Tamil Nadu, Maharashtra and Haryana had HDI above 0.500 and the worst-off states like Bihar, Assam, Uttar Pradesh and Madhya Pradesh had HDI less than 0.400 in 2001. Although, seven states – Bihar, Haryana, Kerala, Orissa, Punjab, Uttar Pradesh and West Bengal could manage to maintain their relative position, the five states, Andhra Pradesh, Assam, Gujarat, Karnataka and Maharashtra experienced deterioration in 2001 relative to 1981. This indicates that

Table 2 Human Development Index (HDI) Across States in India 1981-2005

Name of the	1981		1991		2001		2005	
States	Value	Rank	Value	Rank	Value	Rank	Value	Rank
Kerala	0.500	1	0.591	1	0.638	1	0.814	1
Punjab	0.411	2	0.475	2	0.537	2	0.679	3
Tamil Nadu	0.343	7	0.466	3	0.531	3	0.608	5
Maharashtra	0.363	3	0.452	4	0.523	4	0.689	2
Haryana	0.360	5	0.443	5	0.509	5	0.644	4
Gujarat	0.361	4	0.431	6	0.479	6	0.621	7
Karnataka	0.346	6	0.412	7	0.478	7	0.600	8
West Bengal	0.305	8	0.404	8	0.472	8	0.625	6
Rajasthan	0.256	11	0.347	10	0.424	9	0.537	10
Andhra Pradesh	0.298	9	0.377	9	0.416	10	0.572	9
Orissa	0.267	10	0.345	11	0.404	11	0.452	13
Madhya Pradesh	0.245	13	0.328	12	0.394	12	0.488	12
Uttar Pradesh	0.255	12	0.314	13	0.388	13	0.490	11
Bihar	0.237	14	0.308	14	0.367	14	0.449	14
All India	0.302	-	0.381	-	0.472	-	0.575	
CV	22.56		19.01		16.30		14.56	

Note: Rural and Urban Combined.
Source: National Human Development Report 2001 and Meghalaya HDR 2008

the backward states improved more in human development than the relatively better developed states in the country. Therefore, there is some convergence of states in terms of HDI. The co-efficient of variation (i.e., measure of inequality) shows that it declined from 22.56 percent in 1981 to 19.01 in 1991 and 16.30 percent in 2001 and further to 14.56 percent in 2005.

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Gender Development Index

The Gender Development Index measures the attainments in human development indicators for females as a proportion to that of males. At the national level Gender Equality Index (GEI) increased from 62 percent in the early eighties to 67.6 percent in the early nineties. This implies that, on an average, the attainments of women on human development indicators were only two-thirds of those of men. At the state level, gender equality was the highest in Kerala followed by Manipur, Meghalaya, Himachal Pradesh and Nagaland in the eighties. Goa and the Union Territories, except Delhi, have gender equality higher than the national level. In the nineties, Himachal Pradesh had the highest equality, where as, Bihar was at the bottom and witnessed a decline in absolute terms over the earlier period.

Table 3 depicts the Gender Related Development Index across the Indian

Table 3 Gender Related Development Index across States in India 1981-2001

States	GDI 1981	Rank	GDI 1991	Rank	% change (1981-1991)	GDI	Rank 2001
Kerala	0.872	1	0.825	1	-5.38	0.724	1
Punjab	0.688	7	0.710	8	3.19	0.676	3
Tamil Nadu	0.710	5	0.813	2	14.50	0.675	4
Maharashtra	0.740	3	0.793	4	7.16	0.693	2
Haryana	0.536	12	0.714	7	33.20	0.636	7
Gujarat	0.723	4	0.714	6	-1.24	0.642	5
Karnataka	0.707	6	0.753	5	6.50	0.637	6
West Bengal	0.556	10	0.631	12	13.48	0.631	8
Rajasthan	0.650	9	0.692	9	6.46	0.573	10
Andhra Pradesh	0.744	2	0.801	3	7.66	0.595	9
Orissa	0.547	11	0.639	11	16.81	0.555	11
Madhya Pradesh	0.664	8	0.662	10	-0.30	0.548	13
Uttar Pradesh	0.447	15	0.520	14	16.33	0.520	14
Assam	0.462	14	0.575	13	24.45	0.554	12
Bihar	0.471	13	0.469	15	-0.42	0.477	15
All India	0.620	-	0.676	-	9.03	0.609	-
CV	18.98	-	15.00	-		11.11	-

Source:1. The technical group of Registrar General of India, GOI and KHDR 2005.
2. GOI (2002) National Human Development Report 2001, Planning Commission, New Delhi.
Notes: 1. Ranks have been estimated by GDI values of the State.
1981 and 1991 data was computed by NHDR 2001 and 2001 data by UNDP

States from 1981 to 2001. GDI value at the national level was 0.620 and 0.676 in the early eighties and nineties. At the state level, GDI was the highest in Kerala. Andhra Pradesh, Maharashtra, Gujarat, Tamil Nadu and Karnataka were above the national average and Uttar Pradesh, Assam, Bihar, Haryana and Orissa have lower achievements in the country during 1980s. In the nineties Kerala occupied top position followed by Tamil Nadu, Andhra Pradesh, Maharashtra and Karnataka. Further, Bihar, Uttar Pradesh, Assam, West Bengal and Orissa were below the average (NHDR 2001, MHDR 2008). The co-efficient of variation of GDI values of 15 Indian states substantially declined from 18.98 to 15.00 and 11.11 percent between 1981, 1991 and 2001.

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The other seven Indian states like Maharashtra (0.693), Punjab (0.676), Tamil Nadu (0.675), Gujarat (0.642), Karnataka (0.637), Haryana (0.636) and West Bengal showed the GDI (0.631) value well beyond the all India level and the remaining six states such as Bihar (0.477), Uttar Pradesh (0.520), Madhya Pradesh (0.548), Assam (0.554), Orissa (0.555), Rajasthan (0.573) and Andhra Pradesh (0.595) were below the national average. One of the most significant changes in GDI has been the values of backward states such as Orissa and Uttar Pradesh have shown highest percentage change than developed states like Kerala (-5.38), Madhya Pradesh (0.30), Gujarat (- 24) respectively from 1991 to 2001 (NHDR 2001. The states which have done well on improving their female literacy have also substantially improved gender equity and gender disparities have declined over the three points of time.

Conclusion

Improvements in human development are the ultimate objective of an economy. This study has demonstrated the importance of an iterative process between these ultimate objectives and economic growth. The study also investigated the relative importance of links connecting human development and economic growth based on Indian experience. The results indicate convergence trends rather than divergence in terms of HDI and GDI over a long period of time during the liberalization period. The empirical analysis indicates a positive relationship between economic growth and human development. However, the results show that health expenditure has not significantly influenced human development. The dummy variable which is a proxy for initial level of development is found to be significant in the later development of the states. This clearly suggests that public expenditure on health and education has a higher role in the human development. The government should play an active role in removing all forms of interstate disparities in the field of human development. A nation cannot develop without ad-

equate provision for public health, education, food, clothing, shelter and a decent standard of living.

References

Anand, S & Sen, Amartya (1994), Human Development: Methodology & Measurement, World Bank, New York.

Anand, Sudhir & Amartya Sen (1995), Gender Inequality in human development: Theories & measurement, occasional paper 19, UNDP – HDRO, New York.

Government of India (2001), National Human Development Report 2001 Planning Commission, New Delhi.

Government of Karnataka (2006), Karnataka Human Development Report 2005, Planning and Statistical Department, Bangalore.

Government of India, Economic Survey, various issues, Ministry of Finance, New Delhi.

Government of Meghalaya (2009), Meghalaya Human Development Report 2008, Planning Department, Shillong.

Jean Dreze & Amartya Sen (2001), India: Economic Development & Social Opportunity, Oxford University Press, New Delhi.

Mahbub ul Haq (1996), Reflections of Human Development, Oxford University Press, United Kingdom.

Morris D (1979), Measuring the Condition of the World's Poor: the Physical Quality of Life Index, Oxford Publication, New York.

Ruddar Datt (2003), "Human Development and Economic Development, Deep and Deep Publication Private Limited, New Delhi.

World Bank (2007), World Development Indicators, Oxford Publication, Washington.

MHDC (1997-2002), Human Development in South Asia, Oxford University Press, Karachi.

UNDP, Human Development Reports, various issues of 1990 – 2010.

UNDP (1990-2004), Human Development Report, New York, Oxford University Press, New York.